

## BELLCOMM, INC.

955 L'ENFANT PLAZA NORTH, S.W. WASHINGTON, D. C. 20024

SUBJECT: Test Integration Countdown  
Planning Activities at KSC  
on November 4-5, 1968 -  
Case 320

DATE: November 11, 1968

FROM: C. H. Eley III  
G. J. McPherson Jr.

ABSTRACT

A "stretch-out" schedule for Apollo 8 is being developed to accommodate a December 21 launch readiness date in anticipation of a decision to fly the C' Forward-Alternate Mission.

The requirement to burp fire the SM-RCS during the terminal countdown has been deleted for AS-503 and subs.

The countdown for AS-504 is being restructured to be completely independent of CDDT activities. This will contribute to achieving a "standardized" count by eliminating the impact of test flow changes on countdown procedures and timelines.

The readiness date for the new MILA scan converter is currently December 16, 1968. The readiness date for the new USB wing site is late October, 1969.

Comments pertinent to LM testing in Simulated Flight Tests and MCC/LM Interface Tests (SIT) are included.

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MEMORANDUM FOR FILE

The following items of interest were discussed at meetings of the Saturn V Apollo Test Integration Working Group (ATIWG) and Saturn V Countdown Working Group (CDWG) at KSC on November 4-5, 1968:

AS-503 TEST PROCESSING SCHEDULE

KSC is currently developing an Apollo 8 "stretch out" schedule to accommodate a December 21 launch readiness date. The new schedule would be implemented as soon as a lunar oriented mission has been adopted. The test flow sequence will remain unchanged; however, available slack time would be factored into the test flow while satisfying the objectives of keeping hypergol load as late as feasible and maintaining a high degree of confidence for "launching on date."

AS-503 LAUNCH COUNTDOWN

1. The requirement to static fire the SM-RCS during countdown has been deleted. However, it is still planned to open the isolation valves prior to liftoff since the system is required for abort operations. Pressurization of the SM-RCS will most likely be moved to the T-time previously allocated for the static firing (T-20 minutes).

2. The possibility of requiring an additional 15 minutes serial time during MSS jacking, to accommodate TSM operations, was mentioned by Bendix Support.

AS-503 SCRUB TURNAROUND

The final draft of the Apollo 8 scrub-turnaround plan is expected to get DLO review this week.

AS-504 CDDT/LAUNCH COUNTDOWN

1. As mentioned in a previous report, the AS-504 launch countdown is being restructured to "stand by itself" (i.e., completely independent of CDDT activities). This will contribute to achieving a "standardized" count by eliminating

the impact of test flow changes on countdown procedures. The current issue of the AS-504/Lunar Countdown bar charts reflect this for the LV and CSM but not for the LM. The charts are being revised and will be available at the next meeting. The bar chart showing the last 28 hours of the countdown is expected to be ready for review and sign-off by early next week.

2. A basic difference in test philosophy exists between the LVO and SCO organizations concerning the intent and objectives of the CDDT exercise. SCO plans only select operations which they feel warrant rehearsal or verification while LVO plans a full countdown rehearsal (which inherently includes total LV verification).

3. During CDDT and countdown, LM will provide operational instrumentation as well as DFI until LM cabin closeout (T-20 hours). From that time on, only limited DFI and periodic operational instrumentation will be available.

#### LM TESTING

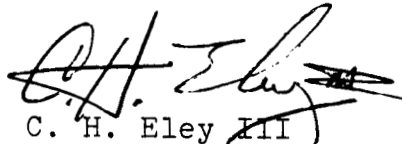
1. There appears to be no requirement nor any intent to perform an integrated SV Simulated Flight Test for a full-up Saturn V. The CSM and LV currently perform such tests (the last of which is FRT) which attempt to compress a nominal mission into a reasonable time frame without disturbing the flight sequence or compromising any interfaces. Abort and alternate modes are also exercised. It would seem natural to incorporate LM activities into this same test as a technique for obtaining the most meaningful data. LM currently plans to perform an independent checkout which will not be designed to follow a nominal mission sequence but will allegedly verify all the different possible modes of operation. On the surface, this approach leaves some question as to the adequacy of the verification of all interfaces.

2. The current MSC ground rule for LM flight ropes configuration during the MCC/LM interface test (SIT) and FRT was discussed. The final flight ropes are mandatory for the FRT. Although the final ropes are also desired for the SIT test, minor changes could be accepted subsequent to the SIT test without requiring a complete rerun. KSC (SCO) requires that final flight ropes be installed before they perform the LM systems compatibility test in the VAB; however, this may not always be possible.

USB SITE

1. The readiness date for the new USB wing site is late October, 1969.

2. The readiness date for the new MILA scan converter is December 16, 1968.



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